

Roman Project News

June 2021

Some project news items

- Now have 24 flight detectors for WFI (18 for flight and 6 spare)
 - Starting triplet testing
- Also completed EPRs
 - Attitude control system
 - SSC EPRs – proposal system, microlensing pipeline, Grism/Prism pipeline, CGI support
- Continuing towards mission CDR
 - Key CDR dates: Mission CDR September 2021, ground system CDR July 2021
 - Wavefront sensing and control EPS (June 25), mission ops and DRM EPR (June 29), Calibration EPR (July), I&T (July), Verification (July)
- For the telescope: last telescope mirror (TM, optically powered tertiary mirror in the relay to WFI) has been successfully coated with protected silver.
- Close call with PMA on April 15, actuator failed on dolly causing PMA to slip during optical testing activities.
 - Dolly now repaired and passed static load test
- Changed design of relative calibration system, and moved work to Goddard



Photo Credit: L3Harris

SM baffle & shade sine vibe burst test

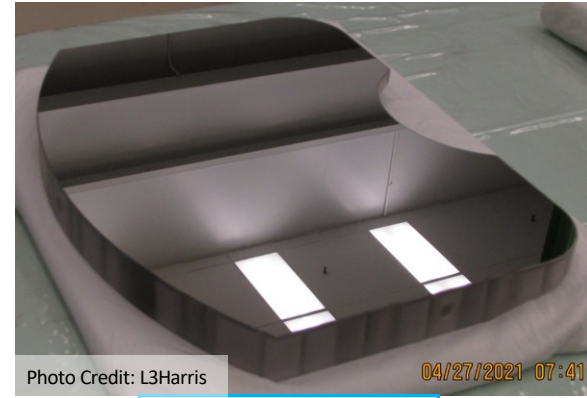


Photo Credit: L3Harris

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FM2 Coated Optic



Photo Credit: L3Harris

Complete TOMAS—ready for post-cure and thermal cycle



Photo Credit: L3Harris

AOSS EM Static Load Test



Photo Credit: L3Harris

TM Pre-Coat Pack & Ship

Relative Calibration System

- Baseline Relative calibration system provided:
 - Flat fields
 - Provide an additional background flux to support the “light-on-light-off (LOLO)” mode for linearity calibration.
 - **ratios** of flux to 0.14% accuracy over 5 orders of magnitude of flux – the “direct mode” for RCS linearity calibration
- In response to technical challenges, the Project had been examining backup solutions for the perceived risks in the RCS development effort.
 - Focusing on replacing the RCS with a simplified design that satisfies a reduced set of requirements.
 - Based on concerns about meeting flux requirements, LED availability, and overall RCS schedule
- Due to insurmountable cost and schedule issues, we have decided to terminate the RCS at SDL and remove the on-orbit calibration requirements from the Ball contract
- Instead, we will proceed with development of the simplified RCS
 - In-house development.
 - Delivery in August 2022.

Simplified RCS performance and capabilities

- sRCS will meet or exceed all RCS performance requirements except one
 - It will yield higher maximum flux per pixel at the FPA due to better optical efficiency
 - Flatfield requirements (smoothness, uniformity, etc) are unchanged
 - LOLO requirements are unchanged
- sRCS will not be capable of the direct mode method of non-linearity calibration (because it will not have a photodiode able to measure flux ratios to 0.14%)
 - Instead, will use Combinatorial Flux Addition method as secondary non-linearity calibration method

Community engagement and outreach

- Iterating with SOC and SSC on an implementation plan for community survey on pre-definition of one of the Astrophysics surveys
- Some recent releases
 - **NASA’s Roman Mission to Probe Cosmic Secrets Using Exploding Stars**
 - <https://www.nasa.gov/feature/goddard/2021/nasa-s-roman-mission-to-probe-cosmic-secrets-using-exploding-stars>
 - **NASA’s Roman Space Telescope Selects 24 Flight-Quality ‘Eyes’**
 - <https://www.nasa.gov/feature/goddard/2021/nasa-s-roman-space-telescope-selects-24-flight-quality-heat-vision-eyes>

Upcoming Meetings

- ESA information session July 6/7
 - <https://www.cosmos.esa.int/web/roman-information-sessions/home>
- Roman-Euclid-CSST June 21-25
 - <https://local.strw.leidenuniv.nl/cms/web/2021/20210621/info.php?wsid=72>
- Next Roman Science workshop on Time Domain Astrophysics hosted by IPAC (likely in Early 2022)